



Weekly Summary Report

USEPA Oversight, Sauget Area 1, Sauget, IL

WA No. 239-RSBD-054V / Contract No. 68-W6-0025

Week Ending Friday, September 17, 2004

This report summarizes the Remedial Investigation/Feasibility Study (RI/FS) fieldwork conducted by Monsanto, Solutia, and their contractors from September 11, 2004 through September 17, 2004 at Sauget Area 1 Sites. The current RI/FS work consists of a dense non-aqueous phase liquid (DNAPL) Characterization and Remediation Study. CH2M HILL provided field oversight on six days during the week.

Contractors Onsite

- Golder Associates (consultant for Monsanto/Solutia)
- Groundwater Services Inc. (consultant/contractor to Monsanto/Solutia for the DNAPL Characterization and Remediation Study)
- Philip Environmental (IDW Services subcontractor to Groundwater Services Inc.)
- Prosonic Corporation (drilling subcontractor to Groundwater Services Inc.)

Work Performed This Week

Groundwater Services Inc. (GSI) and Prosonic Corporation (Prosonic) were onsite during the week conducting work for Task 4 of the DNAPL Characterization and Remediation Study Work Plan (GSI, April 2004), Soil Sampling and Installation of Piezometers. Golder Associates (Golder) was onsite during the week providing field oversight on behalf of Monsanto/Solutia. During the week three soil borings were drilled and bedrock piezometers were installed, with one piezometer completion carried over from the previous reporting period.

Soil Boring / Installation of Piezometers

Prosonic continued drilling soil borings at three locations during the week. The work was conducted under the direction of GSI on behalf of Solutia/Monsanto.

Soil borings were drilled and piezometers installed at the following locations during the week:

- A1-2 at Site H
- A1-16 at Site G
- A1-11 at Site I

Prosonic used sonic technology to drill the soil borings at Sauget Area 1. A 4-inch core barrel was utilized to advance the boring and collect samples. Subsequently, a 6-inch override casing was advanced to support the borehole. Boreholes were drilled five feet into competent bedrock and continuously screened for the presence of non-aqueous phase liquid (NAPL).

Soil Logging and Field DNAPL Screening Tests

Soils were continuously logged and tested during drilling operations. Each 10-foot core was examined using the following field measures:

- Visual and olfactory observations to log soil and geologic conditions and to visually screen for the presence of DNAPL
- Head-space analysis of each 2½-foot interval of core using a Photoionization Detector (PID) to screen for organic vapors
- FLUTe™ strips, a dye-impregnated colored ribbon, directly applied to the soil core, which visually indicates the presence of NAPL
- Sudan IV dye soil testing vials, which will indicate the presence of NAPL in the tested volume of soil

The field screening results and observations are summarized in Table 1. Boring A1-2 encountered some waste within the fill area between approximately 5 and 20 feet below ground surface (bgs), consisting primarily of finely shredded rubber mixed with soils.

Soil Sampling

GSI collected one soil sample from each 10-foot interval of soil core to be submitted for laboratory analysis of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and total organic carbon (TOC). Each 10-foot soil core was sectioned into 2½-foot intervals, with criteria aimed to select the interval for analyses based on the most significant NAPL observations, if applicable. Chemical analyses of soil samples will be conducted by Severn Trent Laboratories in Savannah, Georgia.

Additionally, three relatively undisturbed samples were collected from the boring using a split-spoon sampler. The samples were placed on a tray and wrapped in plastic for storage. These samples will be analyzed for physical properties including porosity, bulk density, and grain size. The physical properties analysis will be conducted by PTS Laboratories in California.

Piezometer Installation

Three piezometers were installed during week at A1-2, A1-16, and A1-11. Each piezometer was constructed to expose the screen to the bedrock core and the interval directly above bedrock in the Deep Hydrogeologic Unit (DHU). The boring was drilled five feet into rock and the well was screened from total depth to ten feet above rock, with a total screen length of 15 feet at each well. Piezometers were constructed using 2-inch diameter stainless steel screen with a 0.010-inch aperture and 2-inch diameter stainless steel riser.

Piezometer construction proceeded by pouring sand directly into the borehole annulus around the well screen. Sand was poured to a depth approximately 2 feet above the top of the well screen, followed by a bentonite chip seal of at least 3 feet in thickness. The 6-inch override casing was retracted from the borehole as the sand and bentonite were placed. A cement-bentonite grout was used to fill the borehole annulus from the top of the bentonite seal to ground surface.

TABLE 1
 Field Screening Tests and Soil Boring/Piezometer Installation Summary
 SA1 Weekly Summary Report, Week Ending September 17, 2004

ID	Site	Date Installed	Approx. Bedrock Depth	Screen Interval	Visual observations	Odor	FLUTe™ Strip Tests	Sudan Dye Tests	Significant PID Readings
A1-3	Site H	Sept. 10	100'	100-115'	None	None to slight	All negative	All negative	331 ppm within waste at 8-10'
A1-2	Site H	Sept. 12	107'	98-113'	None	None to strong odor	All negative	3 positive results (either few red droplets or staining in jar) at 58-60', 63-65', and 68-70'	538 ppm within waste at 8-10' 50-52': 471 ppm, 58-60': 233 ppm
A1-16 (Location near existing LNAPL well, EE-11)	Site G	Sept. 14	116'	106-121'	Black staining at ~27'	Odor within waste, slight odor up to 70'	All negative	4 positive results (either few red droplets or staining in jar) within waste at 3-5', and 8-15'	Readings between 50-100 ppm at 28-30, 43-45', and 63-65'
A1-11	Site I	Sept. 15	116'	106-121'	None	None	All negative	1 positive result (red specks, adhered to sediment particles) at 103-105'	None

Notes:
 All depths are in feet below ground surface

During the week, the surface completions at wells A1-3 and A1-2 at Site H were installed. Each surface completion consisted of a 2 by 2 foot concrete pad at ground surface with a stainless steel protective well casing installed over the well riser. Philip Environmental placed concrete jersey barriers around each piezometer after installation to provide permanent guards from damage at each location.

Health and Safety

Initial drilling at each borehole location within a waste/fill area commenced with all personnel donning Level C Personal Protective Equipment (PPE) including respirator and Tyvek® chemical retardant suits. An exclusion zone was established around the drill rig and sampling area within which Level C PPE was required.

Drilling at each location proceeded for approximately 25 feet bgs with personnel wearing Level C PPE. The breathing zone was frequently monitored using a calibrated PID to check organic vapor concentrations throughout drilling operations. Additionally, a large fan was utilized to ventilate the drilling platform as an engineering control to minimize potential organic vapors in the breathing zone.

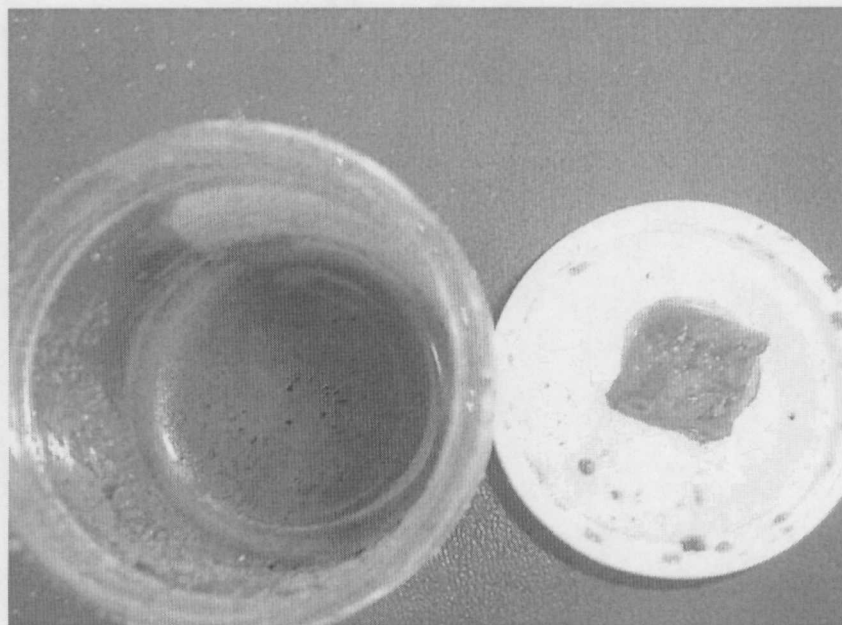
Work Anticipated Next Week

Prosonic and GSI traveled home for the weekend on September 16; work is scheduled to resume on September 21. Drilling soil borings, screening and sampling soil cuttings, and piezometer installation will continue next week. The current schedule by GSI has Task 4 fieldwork completed on October 14.

Photos from September 11, through September 16, 2004:



FLUTe™ Strips were utilized to test for NAPL on all intervals of soil boring, all tests were negative (September 11, 2004).



Three Sudan dye tests showed a slight indication of oil present in the soil boring at A1-2, with a few red droplets and pink staining observed within the vial (September 11, 2004).



Brick fragments were among the waste encountered at soil boring A1-16, Site G (September 13, 2004).



Jersey barriers and the above ground completion of piezometer A1-2, Site H (September 15, 2004).